Serial Communications Boards

CYB 1232C

1-Port PCMCIA RS-232 Serial Card

USER'S MANUAL

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CHAPTER 1 HARDWARE GUIDE

Introduction

This chapter details the specifications of the PCMCIA 1 Port RS-232 Serial card.

PCMCIA 1-Port RS-232 Card Features

* One RS-232 Serial port.
* Reliable communications up to 50 feet, 15m, and beyond.
* 100% 16C550 PC Compatible serial port up to 115200 Baud.
  16950 Compatible FIFO provides 16-byte input and 16-byte output buffer on each port.
* Full modem control TXD, RXD, DSR DCD, DTR. RTS, CTS, and RI signals.
* Fully double buffered for reliable asynchronous operation.
  High speed integrated circuitry ensures operation with fast PC's, e.g., 600 MHz Pentium III.
* Fully Plug and Play.
* Hot Pluggable.

Dimensions:	2 x 3.3 in, 85x55 mm
I/O Connection:	
Serial Port:	9-pin Male D type.
Weight:	16g

Configuring PCMCIA Cards

PCMCIA cards, by definition, require no hardware configuration and can be installed "directly from the box."

CHAPTER 2 INSTALLING IN YOUR COMPUTER

This card is “hot plug” compatible it may be inserted into your PCMCIA type 2 slot when the machine is either off or powered on. Please refer to your machine user guide for detailed instructions on inserting a PC card.

CHAPTER 3 SOFTWARE INSTALLATION

Introduction

This section describes the software installation procedure allowing the CYB 1232C to be configured within the Windows 95, Windows 98, Windows Millennium and Windows 2000 operating systems.

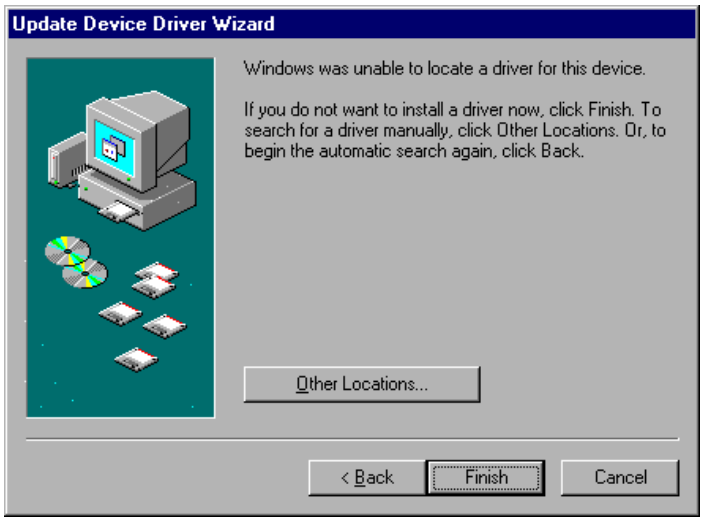
Windows 95 Installation

Insert the card into an available type2 socket. This can be done even if the machine is powered ON.

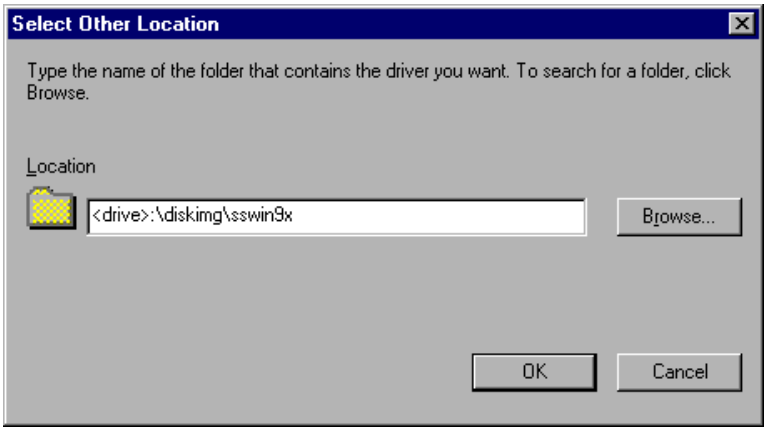
- If installing from a “power off” condition Windows 95 should then load normally. During the booting process, Windows 95 will detect the card and briefly display a message box indicating the detection process.

- Windows will then display the “**Update Device Driver Wizard**,” requesting “**insert any disk which came with the card**.” Insert the CD-ROM installation disk or the floppy disk into an appropriate drive and click **Next**.

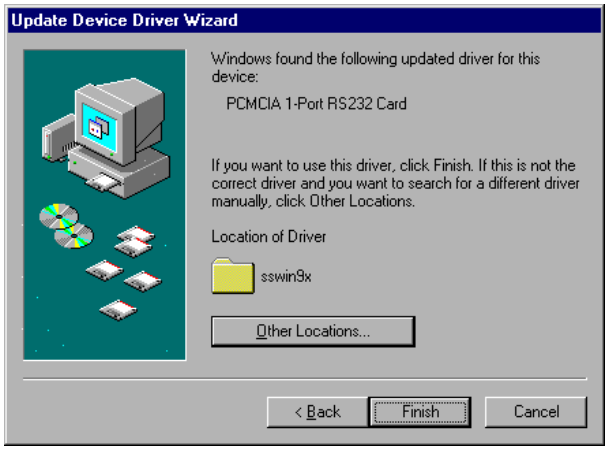
Windows 95 CD-ROM Installation Procedure



Click **Other Locations**.

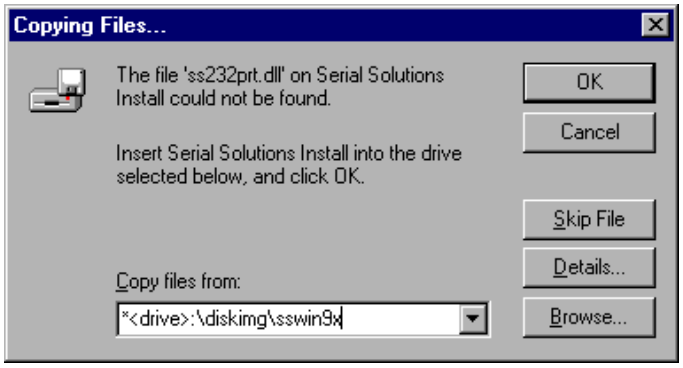


Type **<drive>:\diskimg\sswin9x**, substituting the letter of your CD-ROM drive for <drive>
Click **OK**.



Click **Finish**.

Click **OK**.

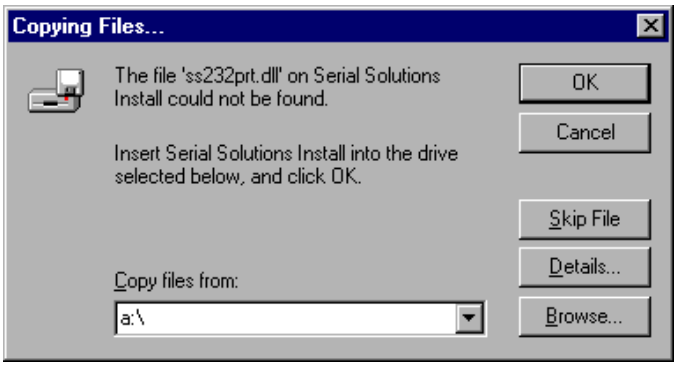


*Type**<drive>:\diskimg\sswin9x**, substituting the letter of your CD-ROM drive for <drive>
Click **OK**.

Windows 95 Floppy Disk Installation Procedure

Click **Finish**.

Click **OK**.



Type **a:**, then click **OK**.

Windows 98/Millenium Installation

- The installation for Windows 98 and Windows Millennium are the same.

- Insert the card into an available type2 socket. This can be done even if the machine is powered ON.

- If installing from a “power off” condition Windows 98 should then load normally. During the booting process, Windows 98 will detect the card and briefly display a message box indicating the detection process.

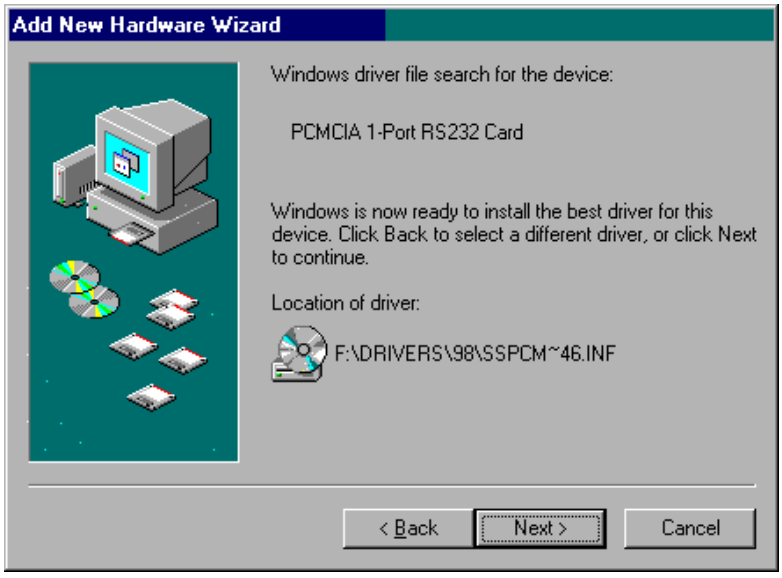
- Windows will then display the “**Update Device Driver Wizard**,” requesting “**insert any disk which came with the card**.” Insert the CD-ROM installation disk or the floppy disk into an appropriate drive and click **Next**.

Windows 98/Millenium CD Installation Procedure

Choose **Search for the best driver for your device**.

Click **Next**.
Select **Specify a location**

Type **<Drive>:\diskimg\sswin9x**, **w**here <Drive> is the letter of your CD-ROM Drive.
Click **Next**.



Click **Next**.

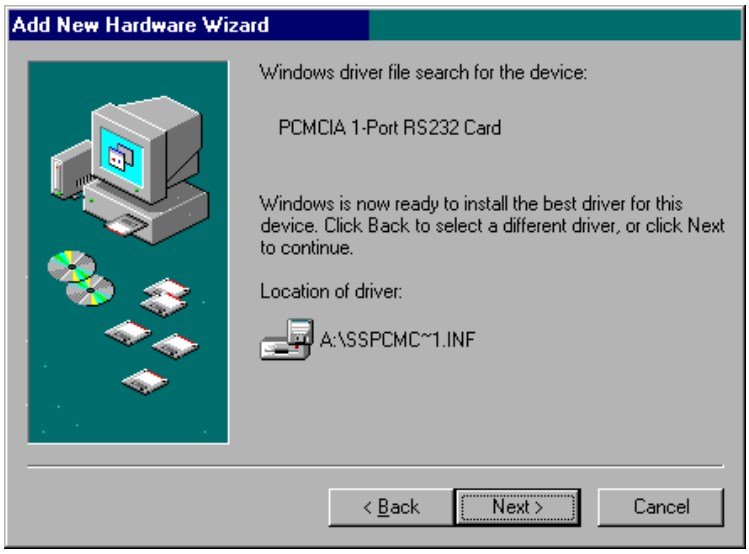
Click **Finish**.

Windows 98/Millenium Floppy Installation Procedure

Choose **Search for the best driver for your device**.

Click **Next**.

Select **Floppy disk drives**, then click **Next**.

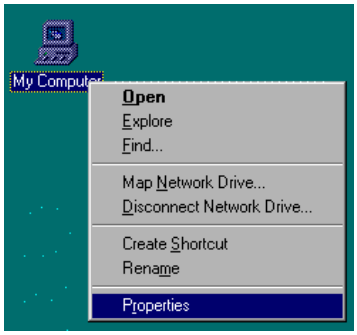


Click **Next**.

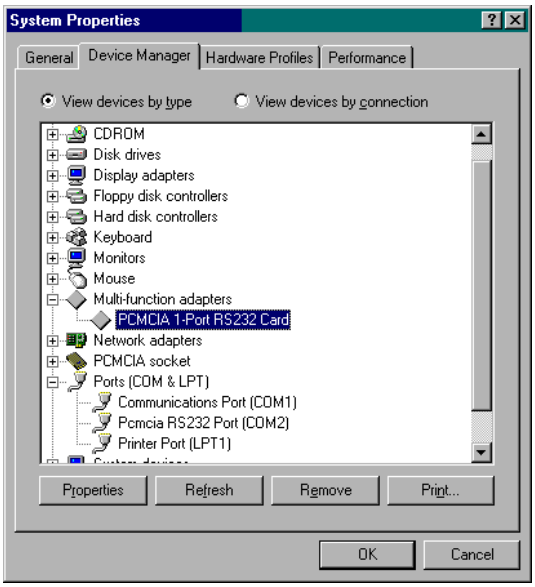
Click **Finish**.

PCMCIA Card Set-Up in Windows 95/ 98/Millennium

Right-click **My Computer -> Properties** on the desktop.

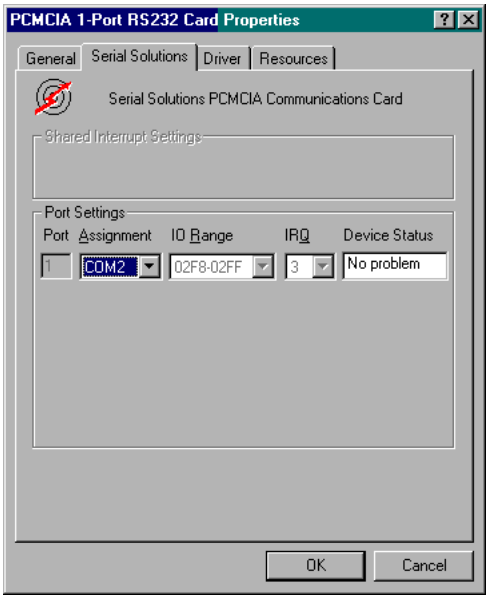


Click on the **Device Manager** tab.



Under **Multi-function adapters** double-click on **PCMCIA 1 Port 422 Card**.

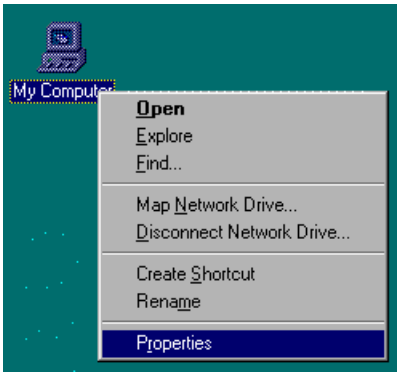
Click on the **Serial Solutions** tab.

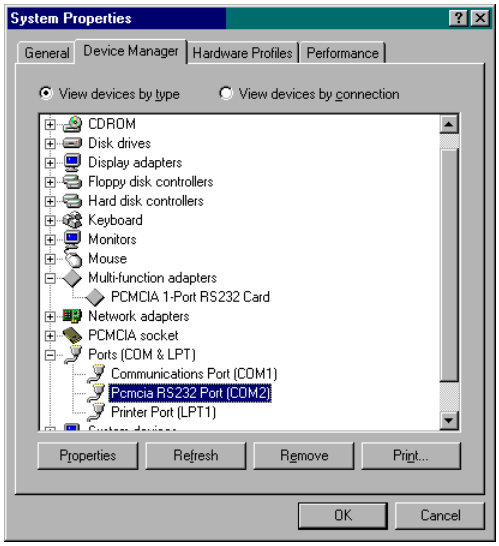


The Serial Solutions tab allows modification of any user controlled features for the card.

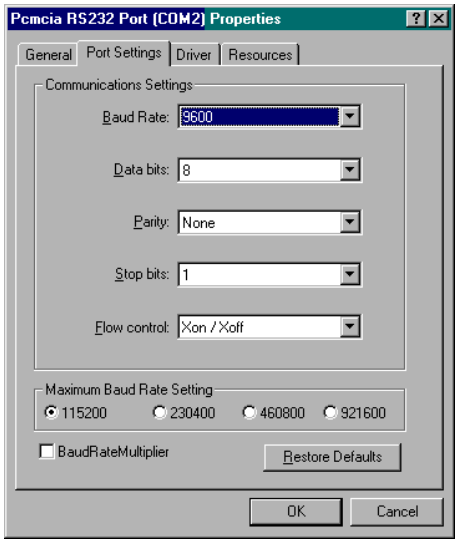
PCMCIA Port Set-Up in Windows 95/98/Millennium

Right-click **My Computer -> Properties** on the desktop.





Under **Ports (COM &LPT)** double-click on **PCMCIA RS-422 PORT (COM*)**.
(* is the number allocated to the port.)



Click on the **Port Settings** tab.
Settings available in this window are:

Baud Rate.
Data Bits.
Parity.
Stop Bits.
Flow Control.

} Change to suit remote device.

Restore Defaults: When clicked, this will reset the selected port to the default values of:

Baud Rate:	9600
Data Bits:	8
Parity:	None
Stop Bits:	1
Flow Control:	Xon / Xoff

Maximum Baud Rate Setting
These settings allow access to the faster data rates available on this card. The faster rates are not enabled by default for compatibility purposes. The faster data rates are only available directly from your application if it uses the standard Windows dialogue for serial port settings.

Baud Rate Multiplier
This enables applications that do not use the standard Windows serial port configuration dialogue to access the faster data rates, e.g., with this option enabled, an application which selects 115,200 baud will actually set the hardware to the fastest possible rate of 921,600 baud. In other words the baud rate is multiplied by a factor of 8.

Windows 2000 Installation

- Insert the card into an available type2 socket. This can be done even if the machine is powered ON.

- If installing from a "power off" condition Windows 2000 should then load normally. During the booting process, Windows 2000 will detect the card and briefly display a message box indicating the detection process.

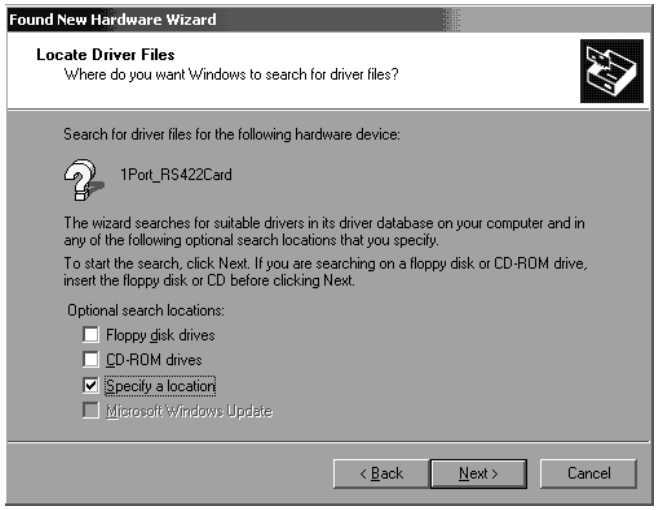
- Windows will then display the "**Found New Hardware Wizard**," requesting "**insert any disk which came with the card**." Insert the CD-ROM installation disk *or* the floppy disk into an appropriate drive and click **Next**.

Select **Search for a suitable driver for my device**.

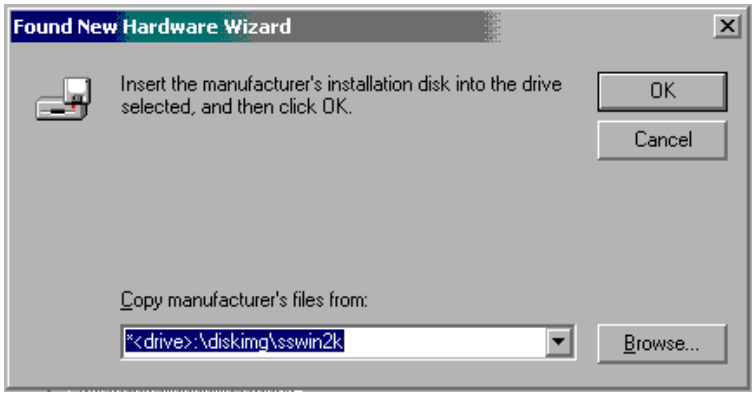
Click **Next**.

Windows 2000 CD-ROM Installation Procedure

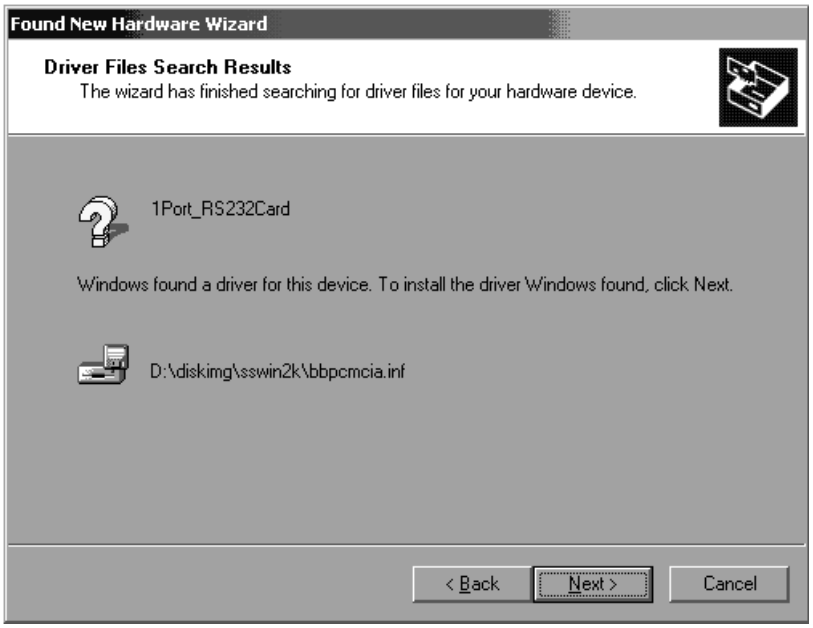
Select **Specify a location**.



Click **Next**.

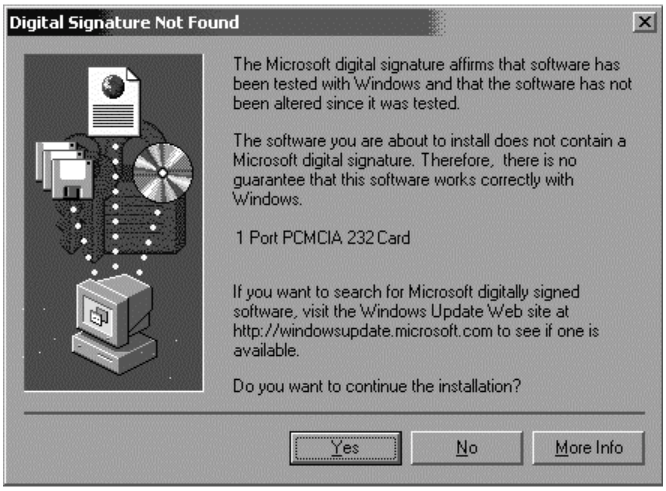


Type **<Drive>:\diskimg\sswin2k**, where <Drive> is the letter of your CD-ROM Drive. Click **OK**.



Click **Next**.

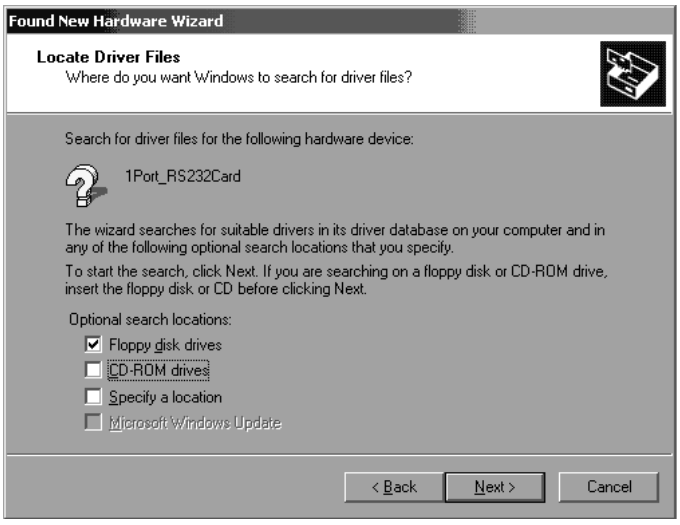
Please note, at the time of creation of this document, Windows2000 is still in BETA, and it is not possible to get drivers signed by Microsoft.



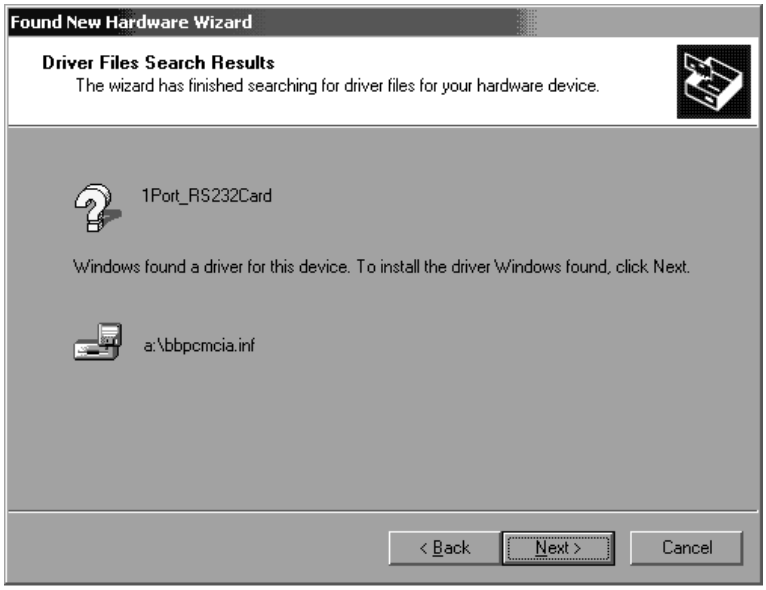
Click **Yes**.

Click **Finish**.

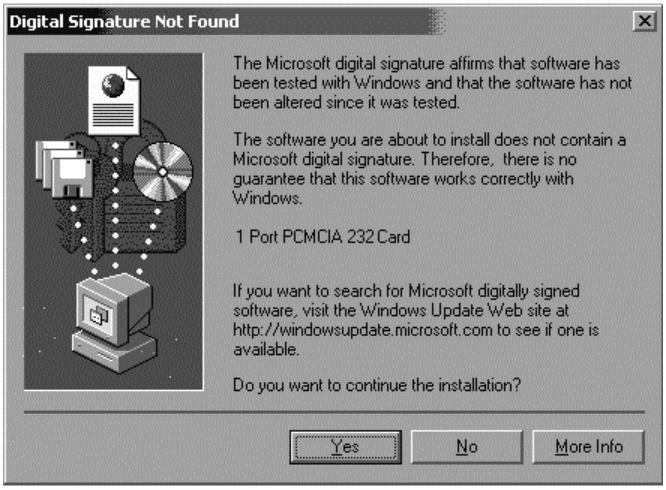
Windows 2000 Floppy Installation Procedure



Select **Floppy disk drives**.
Click **Next**.



Click **Next**.
Please note, at the time of creation of this document, Windows 2000 is still in BETA, and it is not possible to get drivers signed by Microsoft.

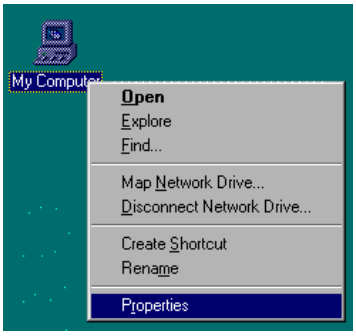


Click **Yes**.

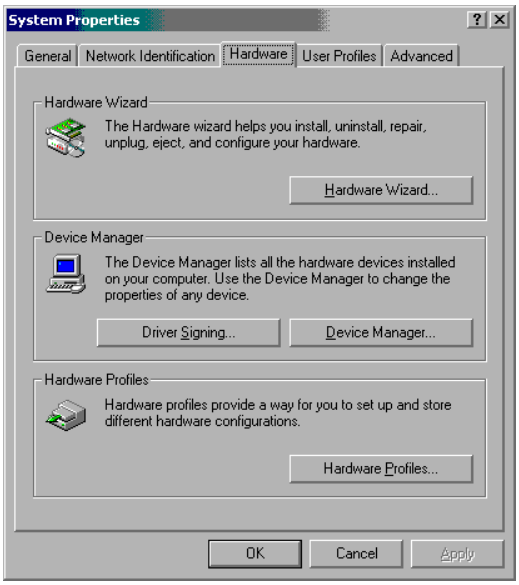
Click **Finish**.

PCMCIA Port Set-Up in Windows 2000

Right Click **My Computer -> Properties** on the desktop.

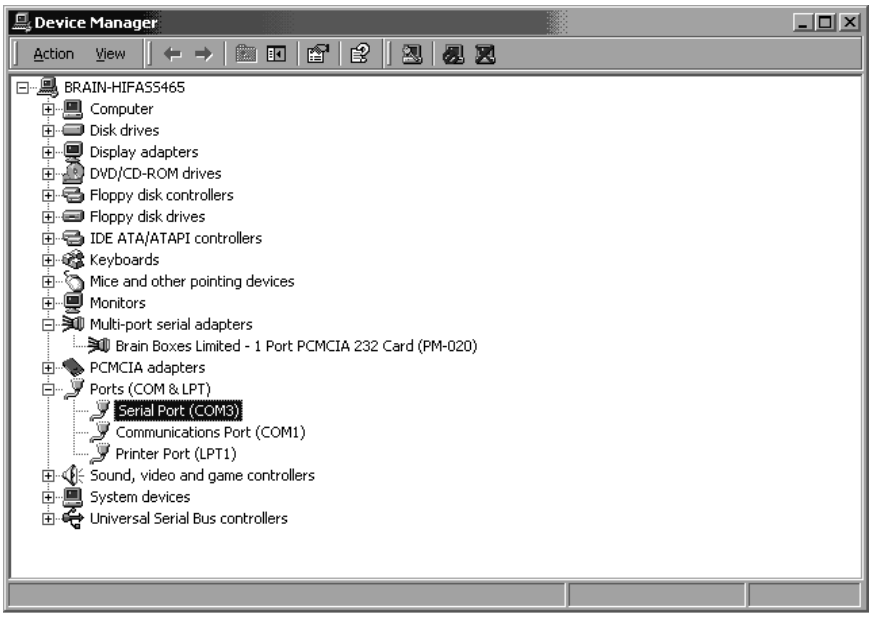


Select the **Hardware** tab.

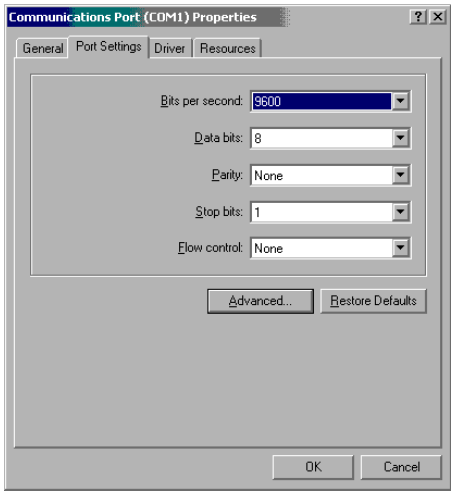


Click **Device Manager**.

Click on **Ports (COM & LPT)**.

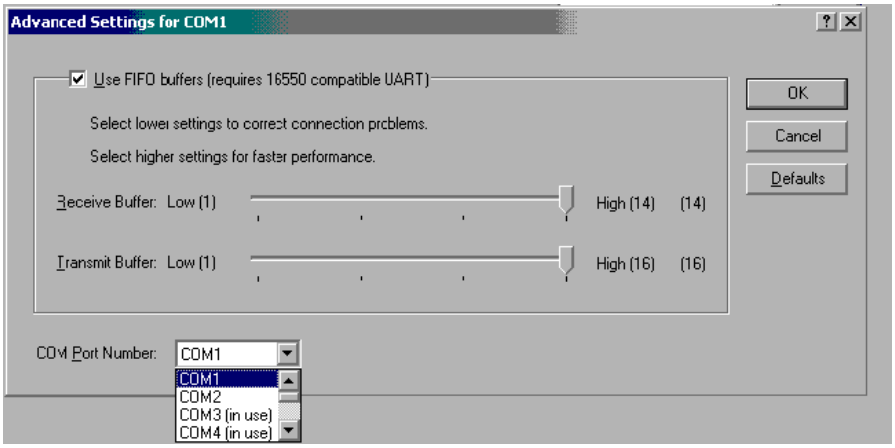


Double-click on **Serial Port**.



Select the **Port Settings** tab.

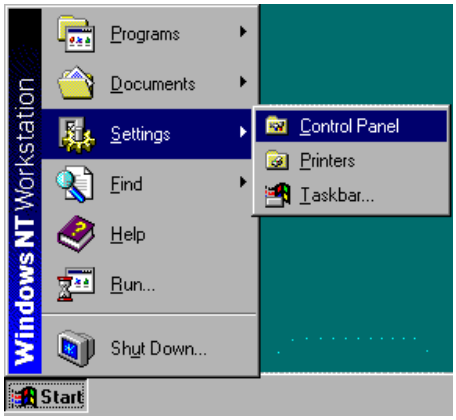
Click on **Advanced**.

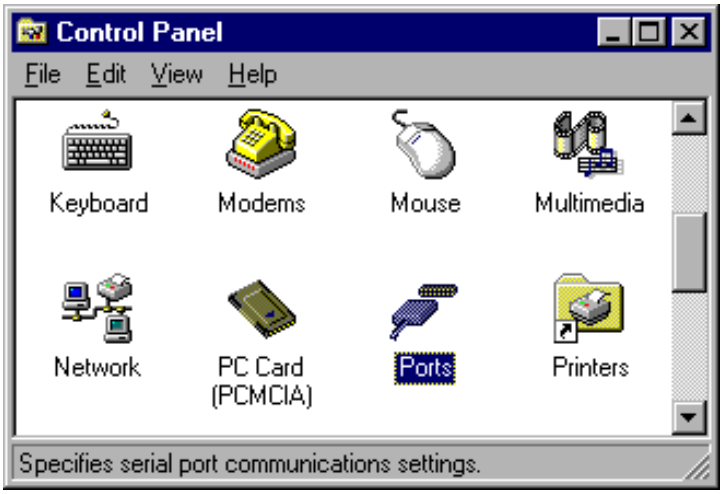


From this screen COM port allocations can be changed.

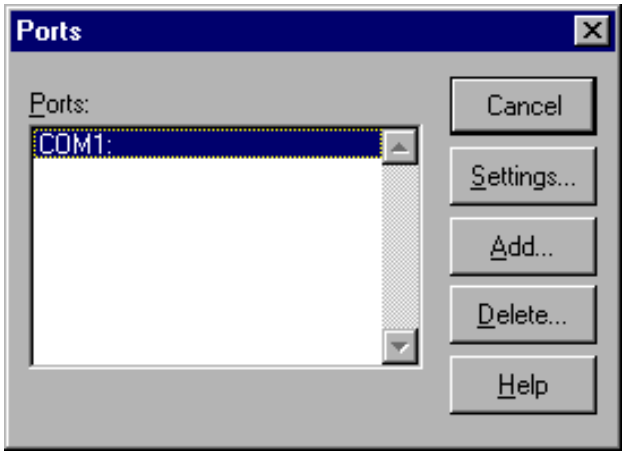
Windows NT4 Installation

Though the CYB 1232C card can be used in Windows NT4 it is not yet available as a hot-pluggable card. Before inserting the card, click on **Start => Settings => Control Panel**.

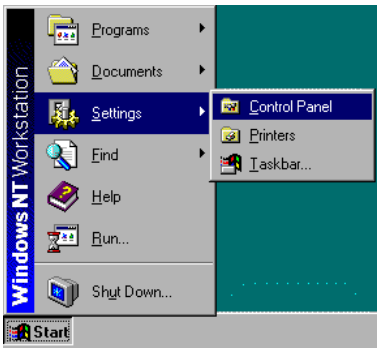




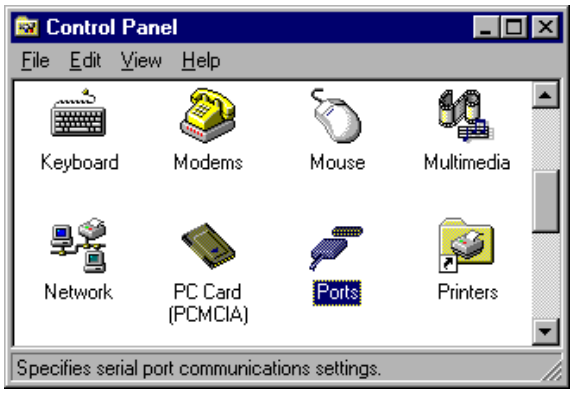
Double-click on the **Ports** icon.

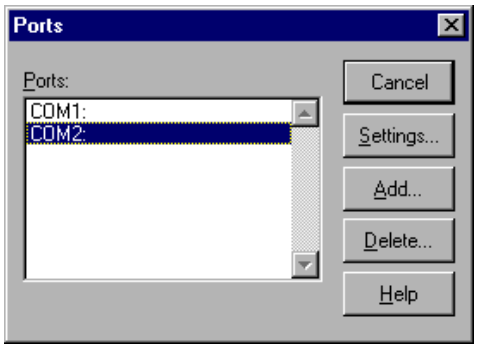


Note the COM ports listed. Click **Cancel**.
Power down your computer, insert the PCMCIA card, then power up your computer.
Click on **Start => Settings => Control Panel**.



Double-click on the **Ports** icon.

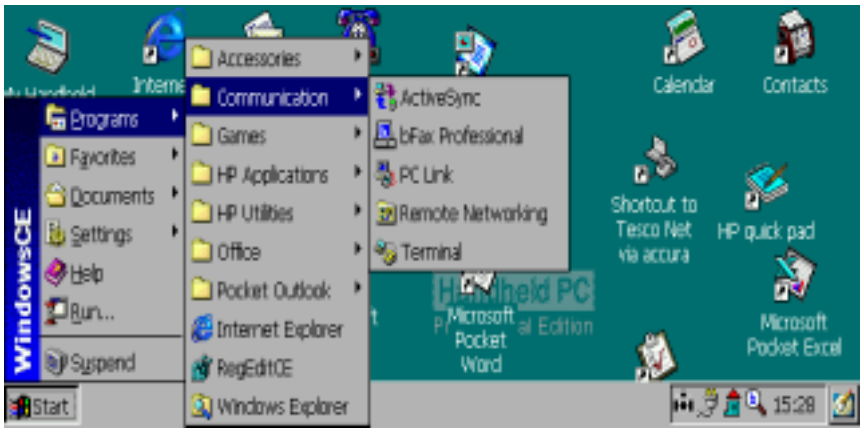




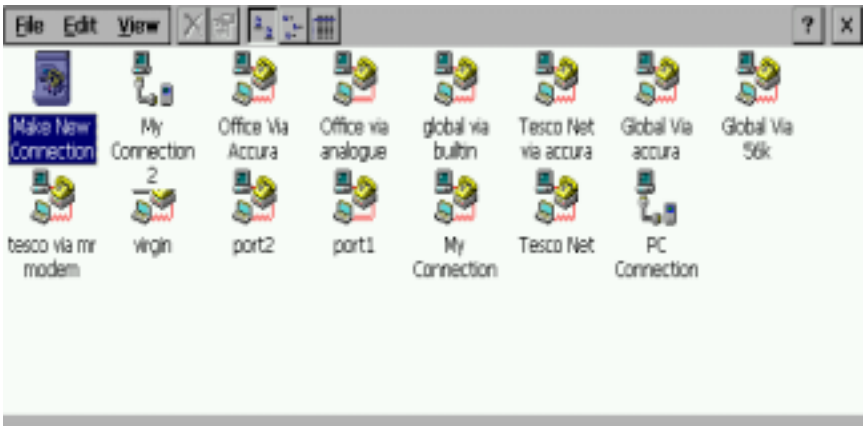
The **New** port listed (in this case COM2 will be the PCMCIA card port.)

Windows CE Installation

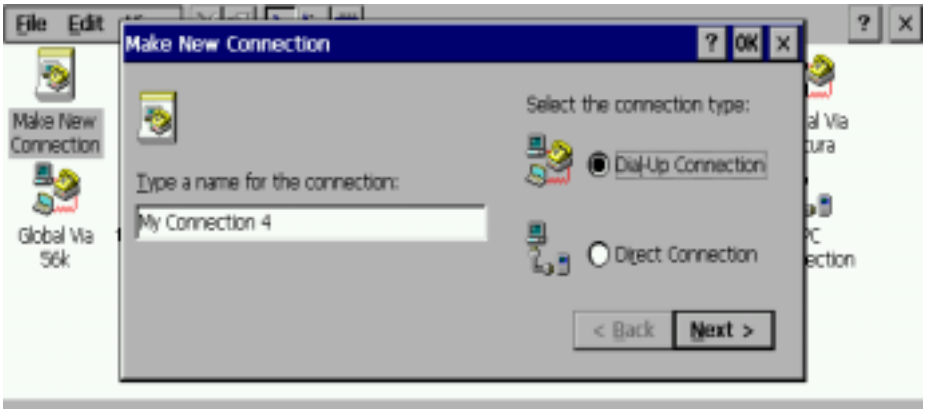
Place card in socket. Select **Start=>Programs=>Communications=> Remote Networking**.



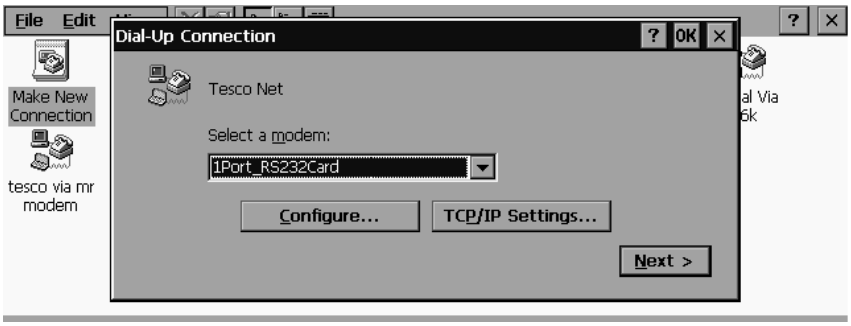
Select **Make New Connection** with your pen.



Type a name for the connection in the field under "**Type a name for the connection**."

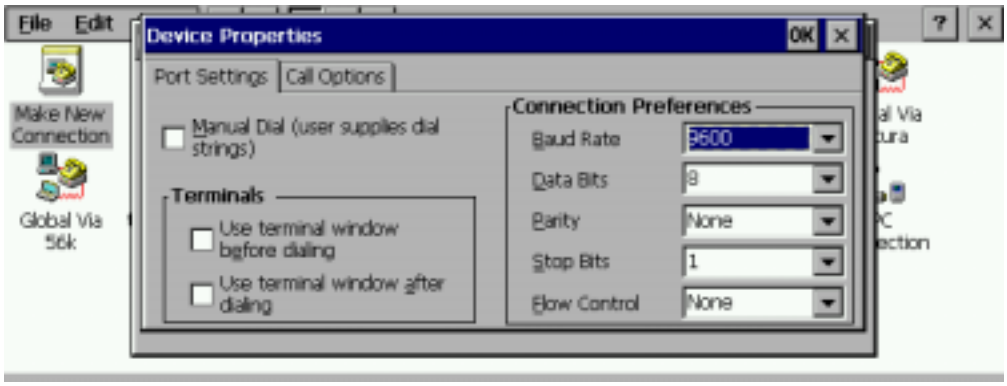


Select **Dial up Connection** radio button.
Select **Next**.



The dialog box shows a modem icon with the name from the previous screen. From the **Select a modem** drop-down menu, select **1port_RS232 Card**.

Click the **Configure** button.



In the **Device Properties** dialog box, set the following:

Baud Rate	9600
Data Bits	8
Parity	None
Stop Bits	1
Flow Control	None

CHAPTER 4 RS-232 PINOUTS AND PORT CABLING

Introduction

This chapter gives details of the 9- and 25-pin RS-232 pin outs cabling and connections, with information on how to connect the serial ports of two PCs and how to make a self-test loop back connector.

The RS-232 Standard

RS-232 is a slow, short distance, single ended transmission system (i.e., only one wire per signal). Typical RS-232 maximum cable length is 50 feet with a maximum data rate of 20K bits per second.

Figure 4-1. RS-232 Point To Point Connection

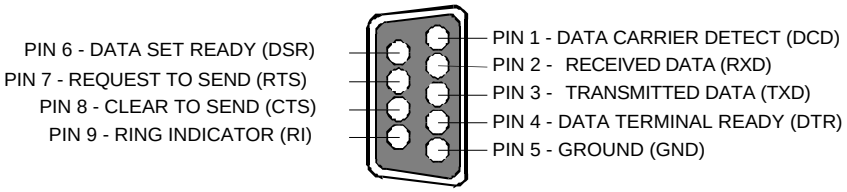
RS-232C Standard 1 Driver 1 Receiver	
Line Length	Max Data Rate
50 Feet = 15m	20 Kbits/sec

Serial Port Pin Outs

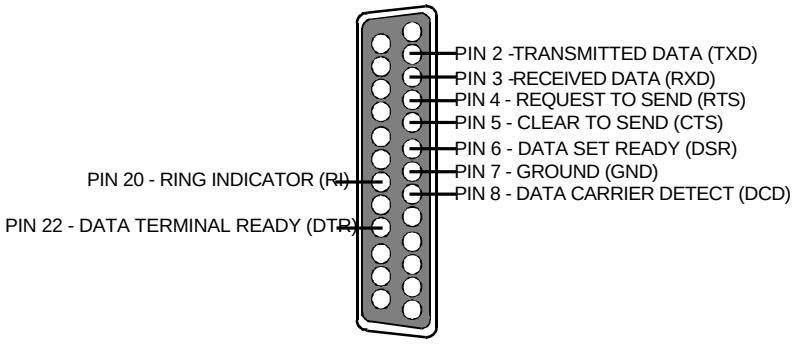
The pinouts of the 9- and 25-pin Male D connectors are given below.

Figure 4-2. Serial Port RS-232 Pin Outs

9-Pin Connector:



25-Pin Connector:



9-Pin D Serial Port RS-232 Cables

To connect to the AT style RS-232 Serial Port like those found on the CYB 1232C card you will need a cable terminating in a 9-way female D connector. It is sound practice to use cables with screws fitted that will allow you to fasten the cable securely to the PC card.

In general, you will need to make up a “cross over cable” to correctly interface the PC to the RS-232 port of another computer or device. The cross over cable is simply to ensure that the right signals going out of one RS-232 port go into the appropriate lines of the other RS-232 port.

9-Pin D Serial Port Connection to Another PC

Suppose we want to connect the AT style 9-pin D Serial Port to the serial port of another IBM-style PC. See Figure 4-3.

1) Connect the earth lines.
   Line 5 of Serial Port 2 to lines 1 & 7 of the other PC.
   This gives the two devices a common earth level.

2) Connect the Transmit and Receive lines together.
   Line 3, TXD Port 2 goes to line 3, RXD of the other PC.
   Line 2, RXD Port 2 goes to line 2, TXD of the other PC.
   This allows each to receive data transmitted by the other.

3) Connect the Port 2 DTR line, pin 4 to the other PC DCD pin 8 and CTS pin 5, lines.
   Also, connect up the other PC DTR line, pin 20 to the Port 2 DCD pin 1 and CTS pin 8, lines.
   This allows the receiving device to signal when it can no longer accept data. The receiving device sets DTR false when it is unable to receive any more data. The sending device reads DTR on its CTS and DCD pins. It should stop sending when CTS goes false.

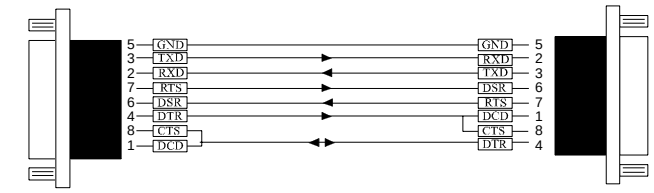
4) Connect the Port 2 RTS line, pin 7, to the other PC DSR line, pin 6. Also, connect the other PC RTS line, pin 4, to the Port 2 DSR line, pin 6.
   This RTS line is used to let the other device know that it is ready for data exchange.

Figure 4-3. 9-Pin D Serial Port to Other PC Cable

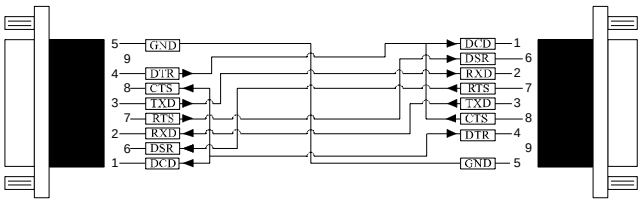
AT SERIAL PORT Side
9-PIN D CONNECTOR

Other PC SERIAL PORT Side.
9-PIN D CONNECTOR

SCHEMATIC REPRESENTATION:

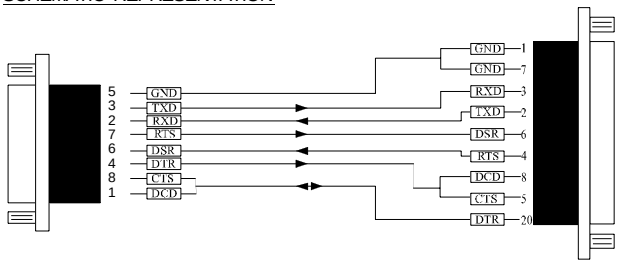


ACTUAL REPRESENTATION:

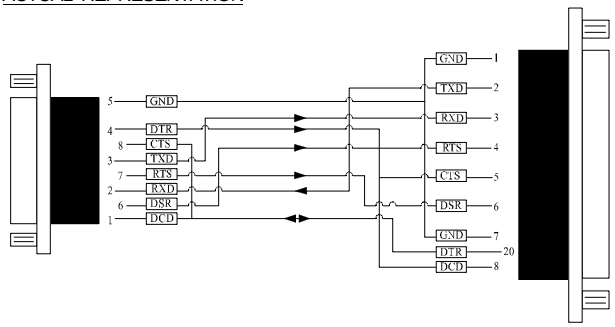


9-PIN D CONNECTOR 25-PIN D CONNECTOR

SCHEMATIC REPRESENTATION



ACTUAL REPRESENTATION



9-Pin D Serial Port to a Modem

If you are connecting a MODEM to a 9-pin D Serial Port then you will *not* need a cross over cable and a straight through cable connected as the 9- to 25-pin adapter given in Figure 4-5.

9-Pin D Serial Port Loop Back Connector

A loop back connector can be used to echo RS-232 data transmitted by a serial port back into its own RS-232 receiver. In this way, the function of the serial port can be tested.

For an AT style Serial Port use the female 9-way connector wired as in Figure 4-4.

Figure 4-4. 9-Pin D Serial Loop Back Connector

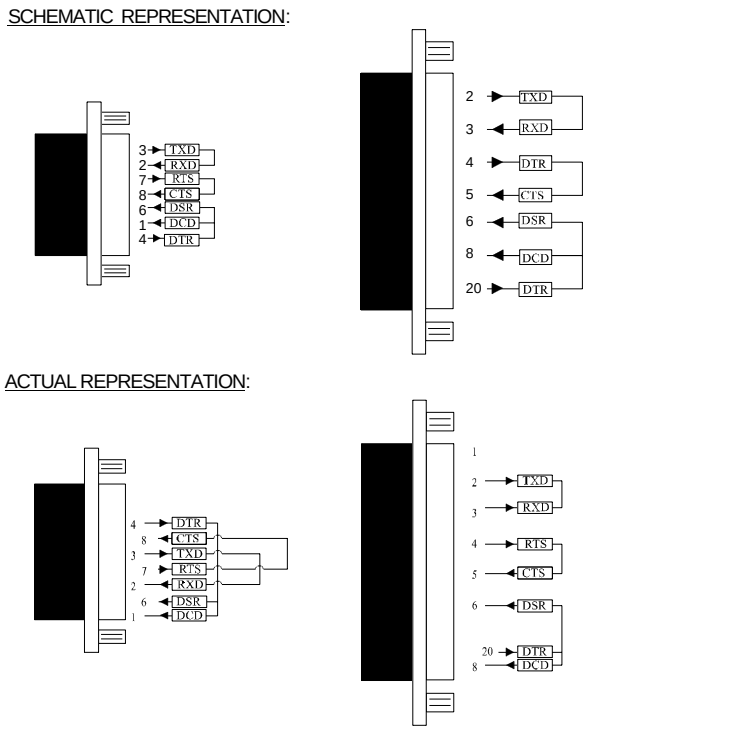
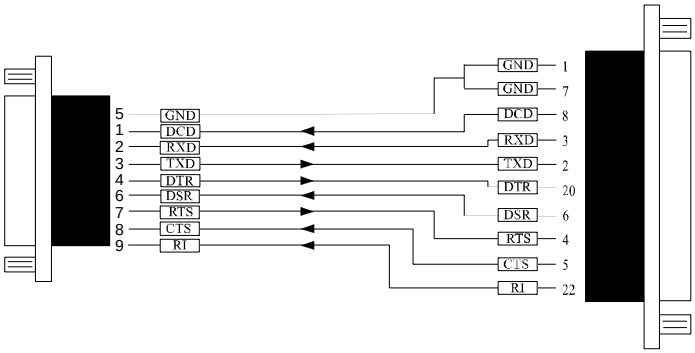
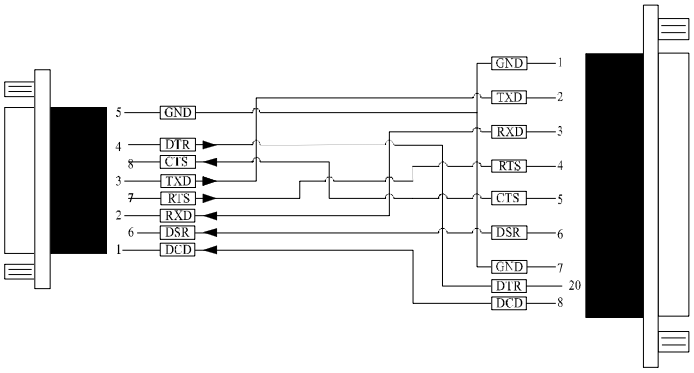


Figure 4-5. 9- To 25-Way Adapter

This adapter cable makes the AT style 9-pin serial port look like the standard PC 25-pin serial port. It is *not* a cross over cable.

9-Pin AT SERIAL PORT	25-Pin PC SERIAL PORT
9-Pin Female D Connector	25-Pin Male D Connector

SCHEMATIC REPRESENTATION:



ACTUAL REPRESENTATION: